

PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

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ORDINARY MEETING.

WEDNESDAY, 6TH MAY, 1953, at 5.0 p.m.

AGENDA

1. Confirmation of the Proceedings of the Ordinary Meeting held on 1st April, 1953.
2. Recommendations of candidates for Fellowship.
3. Announcement of election of new Fellows.
4. Proposed amendment of the Bye-laws: Special Meeting to be held on 6th May, 1953. Third reading.
5. Additions to the Library. [See p. 21.]
6. Admission of Fellows.
7. Papers accepted for publication in the *Transactions*.
8. Exhibits.

Fellows are particularly requested to bring suitable exhibits to the Meeting even though it may not be possible to announce their intention to do so beforehand.

Note.—To avoid congestion in the Library and to enable exhibits to be displayed to greater advantage, a table has been placed in the meeting-room for this purpose. Fellows are asked to place their exhibits on this table, with a suitable explanatory note, as soon as possible on the afternoon of the meeting, so that they are available for inspection there before the meeting opens.

9. Communications.

Mr. W. B. Broughton.

Further Gramophone Studies of Grasshoppers and Crickets.

[ABSTRACT]

Since the demonstration of May, 1952, some further species have been recorded, together with new material from the previous season's species.

One purpose of the demonstration will be to assist the general entomologist and the ecologist in identifying species without recourse to collecting. (In this connection, Fellows may be especially interested to hear the recording of *Chorthippus biguttulus* (L.), the presence of which in Britain has been suspected.) Songs of the following will be played :

Acrididae : *Omocestus viridulus* (L.), *Omocestus ventralis* (Zett.), *Chorthippus vagans* (Eversm.), *C. biguttulus* (L.) (from Munich), *C. bicolor* (Charp.), *C. parallelus* (Zett.), *C. montanus* (Charp.) (from Munich), *C. albomarginatus* (Deg.), *Gomphocerus rufus* (L.).

Gryllidae : *Nemobius sylvestris* (F.).

Tettigoniidae : *Roeseliana roeseli* (Hagenbach), *Metrioptera brachyptera* (L.), *Tettigonia viridissima* L., *Conocephalus dorsalis* (Latr.).

It is of interest to note that the song of *Leptophyes punctatissima* (Bosc.) has also been recorded, but not adequately for public reproduction.

The normal playings will be followed in most cases by slow playing at known reduced speeds ($1/6$, $1/12$ or $1/50$ of normal) ; this brings out very diagrammatically the contrasts in song pattern. In this connection, if circumstances permit, it is proposed to ask those present to contribute once again to knowledge of human auditory discrimination—this time by a more objective method, in the form of a simple written questionnaire about some of the songs.

Some analysis of the songs will be given (with due consideration for those not versed in physics). The need, however, for a standard terminology based on physics and in line with that used in comparable fields such as radio and radar, is acute; last year an attempt was made to supply this, and, arising from the discussion and criticism then made, the following improved scheme is now put forward :

(1) *Pitch of the natural tone* : This term will be applied to the number of sound-waves per second emitted as a continuous tone for a fraction of a second by the tegmen or other resonant structure at its own natural frequency every time it is struck.

(2) *Pulse* : The complete parcel of sound waves resulting from one single impact will be called a pulse. The term

(3) *Pulse repetition frequency* will be applied to the number of these pulses emitted per second during the fraction of a second occupied by each series of impacts. This will generally correspond to the rate at which the teeth of the file pass over the scraper ; and each series of pulses will then represent one stroke of the instrument sweeping the equivalent number of teeth over the scraper.

(4) *Simple chirp* : Such a series of pulses, resulting from one stroke of the instrument, will be called a simple chirp.

(5) *Chirp rate* : The term will be used for the number of simple chirps per second, i.e., the number of *effective* movements of the instrument per second.

(6) *Simple chirp sequence* : Such a series of successive chirps will be termed a simple chirp sequence, and the term

(7) *Sequence rate* : Will be used for the number of these sequences per second.

Other types of combination will be pointed out during the demonstration.

The Ordinary Meeting will be followed immediately by the Special Meeting announced on page 19.

TEA will be served in the Library before the meeting (from 4.30 p.m.).

SPECIAL MEETING.

WEDNESDAY, 6TH MAY, 1953.

The meeting will open immediately after the conclusion of the Ordinary Meeting.

AGENDA.

1. Notice summoning the Special Meeting.
2. Proposed alterations to the Bye-laws.

The proposed amendments to the Bye-laws (pages 12-15 of these *Proceedings*) have been read at three Ordinary Meetings. Their adoption will be moved from the Chair on behalf of Council.

Serial Publications in the Library of the Royal Entomological Society of London.

A list of the serial publications in the Society's Library, with the titles abbreviated in accordance with the *World List of Scientific Periodicals*, has now been prepared. Copies may be obtained in the Society's office, price (to Fellows) 3s. 9d.

PROCEEDINGS OF THE ORDINARY MEETING HELD ON 1ST APRIL, 1953.

Mr. N. D. Riley, C.B.E., Vice-President, in the Chair.

Present 63 Fellows and 10 Visitors.

Mr. Riley reported that a humble message of sympathy had been conveyed to Her Majesty the Queen on the death of Her Majesty Queen Mary.

The minutes of the Ordinary Meeting held on 4th March were confirmed and signed by the Vice-President.

The names of the following candidates for election were read for the first time: Mr. Thomas Chippendale; Mrs. Katharine Marjorie Frances Scott, M.Sc., Ph.D.; and Mr. Glyndwr Williams.

For the second time (taken as read): Miss Pamela Allen, B.Sc.; Mr. Leslie Bilton, M.Sc.; Dr. Mario Enrico Franciscolo; Mr. M. P. Joseph, M.Sc.; Mr. Denys Brian Long, B.A.; Mr. Tribeni Singh; Mr. David Charles Twinn; Mr. Bertram James Dutfeld Warren.

The Secretary read the names of the following newly elected Fellows of the Society: Dr. M. Atiqur Rahman Ansari, M.Sc., Ph.D., D.Sc., Institute of Hygiene and Tropical Medicine, 6, Birdwood Road, Lahore, Pakistan; Mr. Edwin Taplin Bezzant, B.Sc., Infestation Control Division, Ministry of Agriculture and Fisheries, Hook Rise, Tolworth, Surbiton, Surrey; Mr. Albert Leslie Bridgen, 13, Dallas Road, Erdington, Birmingham, 23; Mr. Marco Enrico Clifton Giglioli, B.Sc., c/o Dr. G. Giglioli, O.B.E., Georgetown, British Guiana; Mr. Bruce Boucher Given, M.Sc., Cawthron Institute, Nelson, New Zealand; Mr. Hilmy Mileka Hanna, Zoology Department, The University, Manchester, 13; Mr. Mohammed Mahmoud Hosni, Rothamsted Experimental Station, Harpenden, Herts.; Mr. Frederick Arthur Hunter, 3, The Grove, Harrogate, Yorkshire; Mr. Denis Mellor Jesper, Kimavna, 23, Woodlands Grove, Harrogate, Yorkshire; Mr. Mohan Babu Naidu, Department of Entomology, London School of Hygiene and Tropical Medicine, Keppel Street (Gower Street), London, W.C.1.; Dr. K. Karunakaran Nayar, M.A., Ph.D., Dept. of Zoology, University College, Trivandrum, South India; Mr. Arthur Felix Peacey, Hillside, Brimscombe, Stroud, Glos.; Mr. Vishwa Dev Puri, M.Sc., Central Sugarcane Research Station, Pusa,

(Bihar), India ; Mr. Govindananda Sharma, B.Sc., Entomologist to the Government of Assam, P.O. Jorhat, Assam, India ; Mr. Douglas John Williams, B.Sc., Commonwealth Institute of Entomology, British Museum (Natural History), Cromwell Road, London, S.W.7.

Mr. Riley announced the recent award of the Gold Medal of the Linnean Society to the President, and also called attention to the election of Dr. Charles Elton to the Fellowship of the Royal Society. This was received with acclamation.

In accordance with the Bye-laws, Chapter XXII, Paragraph 1, and Chapter XXV, Paragraph 1, the Secretary read for the second time the notice of a Special Meeting to be held in the Society's rooms on Wednesday, 6th May, 1953, to consider and vote upon certain proposed alterations to the Bye-laws. [See p. 13.]

Thanks were voted to donors of gifts to the Library since the last meeting.

Mr. D. J. Williams signed the Obligation Book and was admitted a Fellow of the Society.

Dr. J. R. Busvine exhibited the nymph of a reduviid bug caught on the trunk of a large *Ficus* tree in Zaria, N. Nigeria. This small insect was entirely hidden by empty skins of other insects, presumably former prey of this bug. This habit of accumulating empty insects and other debris is not uncommon among reduviid nymphs, which are covered with sticky glandular hairs. The specimen exhibited, however, was unusually heavily decorated since the nymph was only about 4 mm. long and carried around a mound of debris as large as a good-sized hazel nut. (The debris was nearly all composed of insect remains.) Mr. Miller, of the Natural History Museum, identified it as *Reduvius* sp. The specimen was slightly damaged and it was not feasible to attempt the extremely difficult task of specific identification from the nymph.

Dr. Busvine said it was tempting to suppose that the accumulation of debris was a form of camouflage ; but there was no direct evidence for this theory. The rapid movements of the insects attract attention ; and this was responsible for the capture of the exhibited specimen. Several specimens were seen during a casual inspection of the knotted roots covering the trunk of the *Ficus* tree. The rapid peregrinations of apparently amorphous bundles of dead insects was somewhat grisly.

Mr. D. Leston exhibited specimens and drawings of *Phloeophana longirostris* (Spin.). He reported that this insect, along with two species of *Phloea* Lep. & Serv., formed a valid family, Phloeidae Dallas, 1851. The family was restricted to Brazil and the Bornean *Serbana* Distant must be excluded from it. The antennae of Phloeidae are three-segmented, the spiracles on the second abdominal segment exposed, the eighth male segment is complete with sclerotized tergum and functional tracheated spiracles. The wing venation is of the *Tessaratomia* pattern and the aedeagus, although highly modified, is readily recognizable as having similar affinities. Thus the family, although modified to an extraordinary extent, must be accounted as ancient with its nearest relations in Tessaratominae, the latter itself by far the most primitive group existing within Pentatomoidea.

The Phloeidae exhibit cryptic coloration and pattern, maternal solicitude for the eggs and 1st-3rd instar larvae as well as protective devices associated with the emission of a repugnant fluid ; however, the nature and mechanism of this latter device needs investigating.

Dr. H. E. Hinton gave a paper describing his further experiments on a Chironomid larva that can be dehydrated without injury, an abstract of which appeared on page 10.

In reply to an enquiry by Dr. Lovelock (a visitor), Dr. Hinton said he had not undertaken any experiments with low temperatures. Freezing must be done very rapidly to prevent the formation of large crystals.

He also said that he had obtained a good percentage hatch of the eggs of the brine shrimp (*Artemia salina*) at a temperature of 103° C. for little more than an hour. The eggs had always been previously heated for about twenty minutes at 60° C. before being placed directly into an electric oven at 103° C.

Dr. J. S. Kennedy gave a paper on the change of host preference with change of form in *Aphis fabae* Scopoli, an abstract of which appeared on page 10. A short discussion followed in which Professor Varley and Miss Longfield took part. Dr. Kennedy said, in reply to Professor Varley, that there appeared to be no evidence of olfactory response in these insects although it was true that the gynoparae, which are the most sensitive to plant kind, have the largest number of sensoria.

E. B. BRITTON, *Honorary Secretary.*

The next meeting will be held on 3rd June, at 5.30 p.m.

ADDITIONS TO THE LIBRARY.

Presented.

- Common names of British Insect and other Pests.* Parts 1 and 2. 8vo. Harpenden (Miss B. M. Stokes, Entomology Department, Rothamsted Experimental Station). 1947, 1952. [Association of Applied Biologists].
- Forster, W., and Wohlfahrt, T. *Die Schmetterlinge Mitteleuropas.* 2te Lieferung. 4to. Stuttgart. 1952. [The Publishers].
- Frick, Kenneth E. A generic revision of the family Agromyzidae (Diptera) with a catalogue of New World species. *Univ. Calif. Publ. Ent.* 8 (8): 339-452, 1952. [The Publishers].
- Osborn, Herbert. *A brief history of entomology. Including time of Demosthenes and Aristotle to modern times. With over five hundred portraits.* 8vo. Columbus, Ohio. 1952. [The Publishers].
- Wirth, Willis W. The Heleidae of California. *Univ. Calif. Publ. Ent.* 9 (2): 95-266, 1952. [The Publishers].

Purchased.

- Märker, Hermann and Schmidt, F. L. *Europäische Nachtfalter.* 8vo. Kaiserslautern. [? 1952]. [*Die Naturkundliche Reihe.*]
- Metcalf, Z. P. *General catalogue of the Hemiptera.* Fasc. IV, part 9, Fulgoridae. Fasc. IV, part 10, Achilidae. 8vo. Northampton, Mass., U.S.A. 1947, 1948.

In addition, separates have been presented by Dr. P. P. Calvert; Mr. N. D. Riley; Mr. M. A. Wynter-Blyth; Commonwealth Institute of Entomology; United States Department of Agriculture; Professor J. Omer-Cooper; Dr. C. A. Clarke; Mr. M. W. Shaw; and Professor P. A. Buxton, C.M.G., F.R.S.

NOTICES

In addition to the *Transactions and Proceedings* (Series A, B and C), the following publications are available on application at the Society's rooms :—

THE GENERIC NAMES OF BRITISH INSECTS, WITH CHECK LISTS OF THE SPECIES, prepared by the Committee on Generic Nomenclature of the Royal Entomological Society of London, with the assistance of the Department of Entomology of the British Museum (Natural History) :—

Part 1. Recommendations relating to the publication of the Committee's Reports								Price	6d.
"	2.	Rhopalocera	..	..	..	..	..	"	3s. 6d.
"	3.	Odonata	..	..	..	..	..	"	3s. 6d.
"	4.	Neuroptera	..	..	..	..	..	"	3s. 6d.
"	5.	Hymenoptera Aculeata	..	..	..	..	..	"	15s. 0d.
"	6.	Coleoptera Carabidae	..	..	..	..	..	"	10s. 0d.
"	7.	Coleoptera Hydradephaga	..	..	..	..	..	"	5s. 0d.
"	8.	Hemiptera Heteroptera	..	..	..	..	..	"	39s. 0d.
"	9.	Coleoptera Staphylinidae	..	..	..	..	..	"	40s. 0d.

HANDBOOKS FOR THE IDENTIFICATION OF BRITISH INSECTS.

The Society has undertaken the issue of a series of publications intended to provide illustrated Keys to the whole of the British Insect Fauna so far as this is possible.

It is proposed to cover this field in a series of ten volumes, arranged as follows :—

I. Part 1. General Introduction.	Part 9. Ephemeroptera.†
" 2. Thysanura.	" 10. Odonata.†
" 3. Protura.	" 11. Thysanoptera.*
" 4. Collembola.*	" 12. Neuroptera.
" 5. Dermaptera and Orthoptera.†	" 13. Mecoptera.
" 6. Plecoptera.†	" 14. Trichoptera.
" 7. Psocoptera.*	" 15. Strepsiptera.
" 8. Anoplura.	" 16. Siphonaptera.
II. Hemiptera.*	III. Lepidoptera.
IV and V. Coleoptera.*	

VI. Hymenoptera : Symphyta* and Aculeata.*

VII. Hymenoptera : Ichneumonidae.*

VIII. Hymenoptera : Cynipoidea, Chalcidoidea and Serphoidea.

IX. Diptera : Nematocera† and Brachycera. X. Diptera : Cyclorrhapha.*

The following parts are now available :—

- Vol. I, Part 5. Dermaptera and Orthoptera. By W. D. Hincks. Price 3s. 6d. plus postage.
- Vol. I, Part 6. Plecoptera. By D. E. Kimmins. Price 3s. 6d. plus postage.
- Vol. I, Part 9. Ephemeroptera. By D. E. Kimmins. Price 3s. 6d. plus postage.
- Vol. I, Part 10. Odonata. By F. C. Fraser. Price 7s. 6d. plus postage.
- Vol. V, Part 12. Coleoptera : Cerambycidae. By E. A. J. Duffy. Price 3s. 6d. plus postage.
- Vol. VI, Part 2a. Hymenoptera : Symphyta (part). By R. B. Benson. Price 10s. 6d. plus postage.
- Vol. VI, Part 2b. Hymenoptera : Symphyta (contd.). By R. B. Benson. Price 15s. 0d. plus postage.
- Vol. IX, Part 1. Diptera : Introduction and Key to Families. By H. Oldroyd. Price 7s. 6d. plus postage.
- Vol. IX, Part 2. Diptera, Nematocera : Families TIPULIDAE to CHIRONOMIDAE. By R. L. Coe, Paul Freeman and P. F. Mattingly. Price 20s. 0d. plus postage.

Parts marked † are on sale or in the press, those marked * in preparation.

Orders for the complete series or for separate parts can be placed with the Registrar at the Society's rooms now, but prices can only be quoted for those parts already issued.

Fellows of the Society may purchase one copy at a discount of 25 per cent. ; additional copies at the full published price.

STYLOPS, a Journal of Taxonomic Entomology.

1932-1935. Vols. 1-4 (all issued). Price £1 16s. 0d. each ; to Fellows £1 7s. 0d.

ABSTRACT OF PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON. 1935. Nos. 1-6 (all issued). 3s. 0d.

HUBNER : A BIBLIOGRAPHICAL AND SYSTEMATIC ACCOUNT OF THE ENTOMOLOGICAL WORKS OF JACOB HUBNER AND THE SUPPLEMENTS THERETO. In 2 vols. By Francis Hemming. Price : Vol. 1. 605 pp. £1 15s. 0d. ; Vol. 2. 275 pp. 15s. 0d.

THE HISTORY OF THE ENTOMOLOGICAL SOCIETY OF LONDON, 1833-1933. By S. A. Neave, assisted by F. J. Griffin. Price 10s. 6d.

SERIAL PUBLICATIONS IN THE LIBRARY OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON. 1951. Price 5s. 0d.

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